

United States Department of the Interior  
National Park Service

National Register of Historic Places  
Multiple Property Documentation Form

This form is used for documenting multiple property groups relating to one or several historic contexts. See instructions in How to Complete the Multiple Property Documentation Form (National Register Bulletin 16B). Complete each item by entering the requested information. For additional space, use continuation sheets (Form 10-900-a). Use a typewriter, word processor, or computer to complete all items.

☒ New Submission ☐ Amended Submission

A. Name of Multiple Property Listing

Aboriginal Lithic Source Areas in Kansas

B. Associated Historic Contexts

(Name each associated historic context, identifying theme, geographical area, and chronological period for each.)

Lithic Source Analysis  
Lithic Technology  
Movement, Interaction, and Exchange

C. Form Prepared by

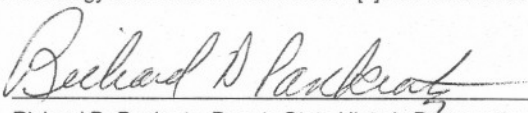
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D. Certification

As the designated authority under the National Historic Preservation Act of 1966, as amended, I hereby certify that this documentation form meets the National Register documentation standards and sets forth requirements for the listing of related properties consistent with the National Register criteria. This submission meets the procedural and professional requirements set forth in 36 CFR Part 60 and the Secretary of the Interior's Standards and Guidelines for Archeology and Historic Preservation. [ ] See continuation sheet for additional comments.

  
Richard D. Pankratz, Deputy State Historic Preservation Officer  
Kansas State Historical Society

11-19-03  
Date

I hereby certify that this multiple property documentation form has been approved by the National Register as a basis for evaluating related properties for listing in the National Register.

Signature of the Keeper

Date

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**Aboriginal Lithic Source Areas in Kansas**

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Provide the following information on continuation sheets. Cite the letter and the title before each section of the narrative. Assign page numbers according to the instructions for continuation sheets in How to Complete the Multiple Property Documentation Form (National Register Bulletin 16B). Fill in page numbers for each section in the space below.

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Paperwork Reduction Act Statement: This information is being collected for applications to the National Register of Historic Places to nominate properties for listing or determine eligibility for listing, to list properties, and to amend existing listings. Response to this request is required to obtain a benefit in accordance with the National Historic Preservation Act, as amended (16 U.S.C. 470 et seq.).

Estimated Burden Statement: Public reporting burden for this form is estimated to average 120 hours per response including the time for reviewing instructions, gathering and maintaining data, and completing and reviewing the form. Direct comments regarding this burden estimate or any aspect of this form to the Chief, Administrative Services Division, National Park Service, P.O. Box 37127, Washington, DC 20013-7127; and the Office of Management and Budget, Paperwork Reductions Project (1024-0018), Washington, DC 20503.

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The most common type of archeological information recovered from prehistoric sites on the Great Plains is chipped stone. Many sites contain additional artifact classes (e.g., ceramics, faunal remains, etc.), but almost all prehistoric sites in this region contain debitage (production and maintenance debris) and/or stone tools. Shott (1994:69) states that lithics are among the most important artifact classes due to their abundance, imperishability, and information content. A critical source of archeological information needed to completely evaluate and interpret the manufacture and use of stone tools, and the role they play in a lithic technological system, is the data recovered from raw material procurement sites (quarries and collecting stations).

Quarries are locations where lithic raw material (e.g., chert, quartzite, etc.) needed to manufacture chipped stone tools was acquired directly from the parent geological source. This acquisition may have involved excavating down to or into the sedimentary rock formations to layers that contained silicified stone. Such acquisition often took the form of obtaining tool stone directly from natural exposures of the parent sedimentary rock, thus requiring no intensive quarrying.

Collecting stations are sites at which tool stone was obtained from eroded contexts or secondary deposits. Such deposits might take the form of residual boulders, tool stone nodules, or gravels contained in sediments that are derived from bedrock. These deposits are typically associated with nearby or immediately adjacent bedrock exposures.

Another property type typically associated with quarries and collecting stations is the lithic workshop. Workshops represent locations where tool stone was reduced into more transportable forms, formal tools, and/or informal (expedient) tools. Workshop sites may also contain broken or exhausted formal tools that were discarded once replacement tools had been manufactured (Gramly 1980).

The intent of this multiple property nomination is to identify major lithic source areas in the state of Kansas, identify and describe the types of sites commonly associated with them, define the relevant historic contexts, and describe the archeological criteria that can be used to determine the eligibility of these sites for listing on the National Register of Historic Places.

## **Background**

For all archeologically defined prehistoric time periods in Kansas, lithic assemblages recovered from archeological sites compose one of the primary lines of evidence used to infer prehistoric behavior. There are a number of reasons for our reliance on lithic assemblages when making inferences pertaining to prehistoric adaptations.

Lithic artifacts are almost always present at a site because they are resistant to the natural processes that destroy organic material remains or reduce their archeological visibility. This higher degree of preservation means that they are oftentimes the only materials recovered from a site that can be subject to study and interpretation.



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Diagnostic artifacts are commonly lithic and are needed for the temporal placement of sites in local and regional cultural sequences when radiometric dating is not possible. When present, diagnostic lithic artifacts (e.g., projectile points, Munkers Creek knives) can be important for assigning a site to a specific archeological cultural complex.

Stone tool assemblages, especially when associated with diagnostic artifacts, are critical in investigations of prehistoric technological adaptations and economies from a temporal standpoint. The composition of lithic toolkits and the forms that certain tools take are indicative of certain economic orientations, adaptations, and hunting strategies (e.g., maintainable versus reliable designs, see Bleed 1986). When stone tool assemblages from a site or multiple sites contain diagnostics, or are associated with other classes of diagnostic artifacts, they can be used to study diachronic trends in technologies and adaptations.

Raw material source areas are geographically limited relative to the larger landscape utilized by prehistoric groups. Therefore, the frequency of raw material types represented in a stone tool assemblage, or in assemblages associated with a specific time period and limited geographic region, can provide information relating to group mobility and/or prehistoric trade networks. For example, Paleoindian sites in Kansas often contain stone tools made from materials that are only available from source areas located some distance from the location of the tool discard or loss. It has been demonstrated that Paleoindian groups were highly mobile (e.g., Hofman 1992; Kelly and Todd 1988). Therefore, the frequency of raw material types in a Paleoindian assemblage can indicate patterns and direction of group movement. During later time periods when prehistoric groups were more sedentary and, in many cases, more logistically mobile, the presence of exotic raw material types provides clues to the nature and degree of trade with neighboring and distant populations, in addition to the nature of group mobility (Vehik 1986, 1990).

Stone tools themselves can exhibit microscopic traces of use (e.g., Keeley 1980; Kay 1996) or traces of organic residues (e.g., Shanks et al. 2001), and some research endeavors have combined these two methods (Hardy et al. 2001; Petraglia et al. 1996). Such evaluations can determine if tools made from specific lithic raw material types were functionally (task) specific and how they functioned, relative to one another, in a lithic technological system.

It is clear that stone tools and related production debris are a primary source of data for studying prehistoric populations and their adaptations. The recording and investigation of lithic source areas can yield information pertaining to adaptation by focusing on the types of tools produced, their method(s) of production and utilization, and the transportation of tool stone and finished tools away from their material source areas. Sites at which tool stone was acquired are archeologically important because they were significant components of prehistoric lithic production systems. They remain the logical archeological resource from which to begin the study of stone-tool-using cultures (Ericson 1984:1).

There are numerous lithic sources in the State of Kansas and they vary considerably in their geographical extent and level of prehistoric utilization. Major geological contexts of lithic raw materials include the



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following: 1) a number of Pennsylvanian age formations located in eastern and northeastern Kansas, such as the Oread and Wyandotte Formations, which include the Toronto, Plattsmouth, and Argentine members (see McLean 1998; Reid 1980, 1984; Wetherill 1997); 2) over a dozen Permian age formations situated in the Flint Hills of Kansas, of which the Wreford and Barneston Formations are the most prolific chert producers (see Banks 1990; Blasing 1984); and 3) the Smoky Hill member of the Cretaceous age Niobrara Formation, which is located in several counties in northwestern Kansas (Banks 1990:96; McLean 1998:187-188). Minor lithic sources include: 1) Day Creek Dolomite of the Permian age Cloud Chief Formation located in Clark County, Kansas; 2) Quartzites associated with the Cretaceous age Dakota and Morrison Formations documented in southwestern Kansas (Bailey 2000; Stein 1985).

**Lithic Source Analysis**

A specific field of study termed "raw material source analysis" has emerged out of the need to determine the origin of lithic raw materials recovered from archeological contexts. Sourcing studies are used to track the movement of raw materials across the landscape and are critical for understanding the degree of mobility or movement of prehistoric groups, the degree to which specific sources were utilized, and the nature and scope of trade.

Sourcing uses one or a number of macroscopic and/or microscopic attributes to classify and investigate tool stone sources. Examples of such attributes are color, texture, grain size, macro and microfossil signatures, and elemental composition. Visual methods are the most common in raw material identification. However, these techniques are associated with a certain degree of inaccuracy due to the wide range of variability that may be expressed by the stone from a specific geological context. Also, tool stone from different geological contexts may outwardly appear quite similar, thus leading to incorrect source assignments.

One method to differentiate similar looking samples from different sources has been the use of ultraviolet light (Hofman et al. 1991). Many types of stone fluoresce at wavelengths unique to specific sources when exposed to ultraviolet radiation, and the application of this method can be used to accurately differentiate one stone source from another. The main limitation of this method is that not all stone types fluoresce under ultraviolet light. Another method of source identification is neutron activation analysis (NAA) (Hoard et al. 1992; Hoard et al. 1993). With this method, a stone sample is irradiated with neutrons. The elements in the sample then release subatomic particles with distinctive properties, thereby allowing researchers to identify the elemental fingerprint of a sample. This method can be used to differentiate between different geological sources and also between subsources from the same geological formation. Similar to this method is X-ray Fluorescence (XRF), which uses X-rays to identify an elemental fingerprint for obsidian sources. Both NAA and XRF require a good understanding of source area geology and the nature of secondary depositional properties in the region under study (Odell 2000:272). Another type of sourcing analysis uses microwave technology to extract microscopic palynomorphs (spores, pollen, dinoflagellate cysts) from a rock sample to determine its fossil palynomorph signature. This method currently can be used to determine only the geological age of a sample (Permian, Cretaceous,

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etc.). However, studies are being conducted at Louisiana State University on samples of Niobrara (Smoky Hills) jasper from northwestern Kansas to determine if differences can be recognized between source areas of the same geological age (Martin Stein, personal communication 2002). Source analysis can be especially powerful when sites with differing geographic relationships to a material source are compared in order to infer regional organization of labor with respect to a lithic technology and economy (Odell 2000:278). Sourcing is also critical in understanding how lithic raw material use changed over time. While the mechanics and reasons behind such change are varied, any investigation along these lines is reliant on accurately identifying the sources of stone used to make tools.

**Lithic Technology**

Stone tool or lithic technology can be defined as the processes that contribute to the production of stone tools, strategies of manipulation and sequencing, and the knowledge of raw material characteristics and operative forces (Odell 2000:283). Lithic studies have demonstrated that the quality, proximity, abundance, and accessibility of raw material outcrops influenced the technological choices made by prehistoric groups (e.g., Andrefsky 1991, 1994a, 1994b; Bamforth 1986; Montet-White 1991). Therefore, locating quarries and collecting stations and understanding the production activities that occurred at such sites are critical to our studies of lithic technology. Studies can address questions such as, did prehistoric groups only test cobbles at a quarry, or did initial reduction and blank production take place there? What reduction techniques were used? Could these reduction techniques be a reflection of the desired form of the end product, or were they a function of the form of the raw material (e.g., cobble, tablet, secondary gravel, etc.)? By incorporating data from source area assemblages in the pursuit of answers to these questions, a researcher can begin to make inferences pertaining to the details of a specific lithic technology.

Analysis of lithic technology is centered on the classification of formal and informal tools and debris into functional, morphological, and contextual categories. Classification reduces variability into manageable units to facilitate comparison (Andrefsky 1998:59). It is through the evaluation and comparison of these categories that behavioral inferences are made. This method of inference becomes more powerful when multiple sites and technological systems are compared. Differences in the frequency of material types and artifact classes in a lithic assemblage reflect differences in the lithic technologies and prehistoric adaptive strategies under consideration (Spath 1989).

A concept that broadens our understanding of prehistoric lithic technologies is the chaîne opératoire, or operational chain. This term describes the incorporation of the processes of production and use into the typological classification and interpretation of stone tools (Bleed 2001; Sellet 1993; Van Peer 1992). This approach considers the life history of a tool from the moment of raw material acquisition, through production, use, rejuvenation, and finally discard. The chaîne opératoire approach is similar to the reduction sequence approach common in North America but is more comprehensive because it incorporates raw material attributes such as availability and abundance into interpretations of tool

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morphology (e.g., Bar-Yosef 1991). Therefore, as stated above, the analysis of quarries, collecting stations, and workshops is paramount.

Understanding raw material reduction processes is critical in studies of lithic technology. The reduction process can be defined as the actions required to make a stone tool from a piece of raw material. Since the production of tools is a reductive process, waste materials are left behind. Initial reduction, intermediate stage reduction, and final reduction or shaping all leave behind debris (debitage) with distinct characteristics. Also,debitage attributes are used to infer which production tools (e.g., hammerstone, antler billet) and actions (e.g., direct percussion, indirect percussion, bipolar reduction) were used to create the debris. These inferences are possible because of the data collected from replication experiments and refitting studies using archeological materials.

The production of stone tools requires multiple stages (see Bleed 2001), and some or all of these stages are present at quarries, collecting stations, and associated workshops. By analyzing thedebitage recovered from such sites, one can understand the production strategies used by prehistoric groups to reduce a specific type of raw material. These analyses are aided if temporally diagnostic artifacts are present in the recovered assemblage. Such a pattern is not uncommon since exhausted and broken tools were discarded at these acquisition locales once replacements had been manufactured (Gramly 1980). These discarded tools represent examples of what types of tools and their associated form and condition were considered to be exhausted or used beyond repair and in need of replacement. Therefore, one can begin to address questions relating to prehistoric decision-making as it related to refurbishing, recycling, re-use, and discard. If diagnostics artifacts are present, changes over time in reduction strategies and the structure of the corresponding lithic technologies can be recognized. However, temporal studies may not be possible if prehistoric groups did not discard exhausted tools at the site or only performed initial reduction at the quarry and finished diagnostic tools at another locale.

At quarries or collecting stations where the final stages of tool production are not represented by the corresponding class of debris, it is inferred that the tool stone was transported away from the source locale for final tool production at other sites. This material may have been transported in the form of blade or flake blanks, prepared cores, prepared bifaces, performs, etc. In some instances, tools may have been produced, used, and discarded at the source locale. These tools were most often used to modify or produce non-lithic tool components (wood or bone haft elements, tools made from perishable materials, etc.). These types of behavior at and away from source areas are dependent on a number of natural and cultural factors including the quality and availability of the raw material, the intended use of the raw material, the occurrence and distribution of the raw material relative to other resources, and the patterns of human exploitation of these other resources. The study of such issues and the understanding of resultant archeological patterns, as they pertain to lithic technology, are dependant on the study of the archeological record at source areas.

The theoretical and case specific study of curated and expedient lithic technology and how such organization relates to subsistence and settlement systems is prominent in North American archeology.



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Curated technologies are those in which once a tool is produced, it is carefully maintained and refurbished, and transported to and from separate locations of use (Binford 1977). The intensity of maintenance and recycling of tools in a curated technology appears to vary in response to raw material availability (Bamforth 1986:48). These tools are typically made from high-quality stone, have experienced a great amount of effort in their production, and are flexible in their design (Goodyear 1989; Torrence 1983). Flexibility of design means that such tools can be easily transformed to perform a different function than that for which they were originally designed. Curated technologies are commonly associated with either highly mobile or logistically oriented settlement systems (Kelly and Todd 1988). Expedient technologies, by contrast, are informal and typically unstandardized. Tools are made, used, and discarded over a relatively short period of time, and oftentimes not transported from site to site. Binford (1979) terms such tools as situational gear, or tools that are put to use in response to specific and immediate conditions rather than in anticipation of future situations or needs. Expedient technologies are more wasteful in their use of raw material and are composed of simpler tools with less formal patterning or design (Andrefsky 1998:213). Such systems are present in highly mobile groups, but are more common or marked in more sedentary populations in areas with easily accessed or abundant raw materials (Parry and Kelly 1987). A crucial starting point in the study of these aspects of technological organization is the raw material source locale because its associated archeological assemblage usually contains relevant materials and information.

**Movement, Interaction, and Exchange**

Another context in which examination of lithic source areas and their associated archeological assemblages is important is the study of human movement across the landscape and the exchange of lithic resources (Spath 1989). Gramly (1980:823) states that identifying raw materials and their specific source areas has been a concern in discussions of population movements. The scale and organization of human movement can be inferred by identifying the raw material sources for lithic tools and analyzing production or maintenance debris at sites across the landscape. Hofman (1991, 1992) analyzes several Folsom age assemblages with variables such as degree of tool curation, raw material type, and distance to source areas to infer patterns of group movements including the direction, frequency, and magnitude of such movements. Distinguishing between the movement of people versus simply the movement of materials across a landscape is problematic (Kelly 1992:55-56). However, the emphasis on archeological theory and ethnoarcheological studies over the past two decades has made archeological inferences more accurate and has shown that quarry and workshop sites are critical components in our study of the movements of people and materials.

As has been illustrated above, quarry and workshop assemblages cannot be studied in isolation. Rather, their assemblages must be compared with assemblages from other site types (camps, kill sites, etc.) present in the region of study. It is only through such comparisons that archeologists can understand why certain reduction sequences took place at quarries and workshops and why these site assemblages contain or do not contain specific types of tools or debris. Ethnoarcheological studies have demonstrated that the procurement of lithic raw material from quarries and collecting stations is usually embedded in

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subsistence schedules of exploitation (Binford 1979). This means that only very rarely did groups go into the environment with the sole and express purpose of obtaining tool stone (i.e., direct procurement). This acquisition was usually performed while a group was in an area procuring other resources (e.g., game, plant resources). Studying the nature of lithic assemblages at quarries and other sites in a region allow archeologists to understand the scale of group movement and how their subsistence and settlement systems were organized.

Prehistoric mobility as it relates to resource exploitation is generally broken down into two separate classes: residential and logistical (Binford 1980). Residential mobility is typical of foragers and simply means that the people move to the resources. Logistical mobility is typical of collectors and describes the process of moving resources to the consumers at a place separate from the resource's occurrence. These different organizations of resource procurement have profound effects on the organization of a lithic technology. Kelly (1992) provides an excellent review of the literature describing such variability. If temporally specific components and assemblages can be identified at source area sites, they can be critical in inferring temporal changes in settlement and subsistence systems in a specific region.

Lithic source areas and how they relate spatially and functionally to surrounding sites has been a focus of archeological investigations into the exploitation of lithic raw materials for trade (Vehik 1986, 1990). A number of Middle and Late Ceramic age sites in Kansas have contained artifacts and debris made of obsidian or volcanic glass. Source identification studies have traced these materials to New Mexico, Wyoming, and Idaho as their point of origin. It is unlikely that Central Plains groups traveled directly to the source areas to obtain this stone. Focusing on the types of tools made from this stone and their functions can lead to more detailed understandings of trade and intergroup interaction. Such issues could not be addressed without the data indicating the materials' sources of origin.

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**PROPERTY TYPES**

**Quarry or Collecting Station**

Quarry sites are areas from which lithic raw materials have been obtained directly from the geological deposits within which they are contained. For the purposes of this nomination, lithic raw materials are defined as cryptocrystalline or siliceous stone that can be mechanically flaked or reduced into stone tools. The nature or structure of a quarry site is dependant on the character of the raw material or the form in which it occurs (e.g., tabular pieces, nodules), and the associated geological matrix. A variety of procurement strategies were employed by prehistoric groups to obtain the siliceous rocks: excavation of pits, trenches, or shafts; removal of the lithic raw material directly from exposed bedrock along bluff faces or exposed ledges. This type of lithic raw material procurement is considered active and differs from that seen at collecting stations. Extraction activities can be archeologically visible, thus quarries may be recognized without the presence of lithic reduction debris or workshop areas. It is possible to have quarry locales at which no lithic testing or tool production took place. In such instances, tool production occurred at other sites away from the locale of acquisition (Sappington 1984). Nonetheless, lithic workshops where testing of procured raw materials, or early stage reduction, took place are oftentimes associated with quarries. In some instances, more intensive lithic reduction beyond initial testing or core shaping may have been performed at the quarry location.

Collecting stations are sites from which siliceous raw materials were collected from secondary geological deposits. These may consist of talus slopes at the base of exposed bluff faces or ledges, sedimentary deposits derived from the weathered parent material which contain siliceous rock nodules or tablets, or colluvial or alluvial deposits in close proximity to the original geologic source of tool stone. The acquisition of lithic raw materials from such deposits differs from quarrying in that collection stations represent a more passive means of acquiring tool stone. Collecting stations are almost always associated with workshop areas. The reason for this association is that the "passive" acquisition of stone without any associated production debris at the procurement locale is not usually archeologically visible. In other words, archeologists usually are able to identify a collecting station only if testing or production debris is associated with it.

Prehistoric quarry sites and collecting stations can be significant for a number of reasons. Any analysis of prehistoric lithic technology is concerned with the sequence and strategies of lithic reduction that were employed to produce blanks and, in the end, finished tools. Reduction sequences are strongly dependent on the initial form of the lithic raw material. Thus, it is important to know the form that a raw material takes in its geologic setting and how prehistoric groups acquired it. Lithic raw materials quarried directly from their parent material tend to be unweathered and have higher moisture contents than those obtained from secondary deposits, thus making them more predictable in their flintknapping characteristics. Therefore, prehistoric groups may have had more flexibility in their reduction strategies if they used materials quarried directly from the geologic parent material. Materials derived from secondary deposits at collecting stations may have been weathered or fractured such that a reduction strategy using these



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materials may have been limited. Therefore, it is important to understand from what context tool stone was obtained if archaeologists are to make complete and accurate interpretations of prehistoric lithic technological systems.

Significant quarry sites and collecting stations also provide archaeologists with information on the nature of tool stone in its original context as well as the geographic locations and geological formations which contain these materials. Quarries and collecting stations can provide information on the strategies that prehistoric peoples employed to obtain the lithic raw materials. For example, what methods were used to gain access to strata containing flakeable stone?; what methods did prehistoric groups employ to remove lithic raw materials from the parent source? Flakeable stone was a critical resource to prehistoric populations and the location of tool stone sources had a strong influence on human behavior and mobility. All of the variables mentioned above can provide important information to investigations of lithic source analysis, lithic technology, patterns of group movement or mobility, and regional exchange systems.

The National Register of Historic Places should include the primary, distinctive or unique, and well-preserved quarries and collection stations in Kansas. To be considered eligible for listing on the National Register of Historic Places, a quarry or collecting station should have distinguishable procurement areas which can provide geological information on the particular lithic raw material, evidence for the employed methods of extraction (although these may not be present at collecting stations and some quarries), and lithic production debris that allow one to determine the strategies employed for testing the lithic raw materials and/or the lithic reduction strategies for producing tool blanks and/or finished tools. However, workshop areas and associated lithic debris may not always be present at quarries and collecting stations. When they are present, they can contribute significantly to our understanding of the associated lithic economy, but their absence should not be seen as lessening the potential eligibility of a quarry. The lithic raw material available at such a site should be distinctive and unambiguously identifiable, commonly used during prehistory and therefore important to the lithic technological system of an archaeological cultural complex, or complexes. Any procurement locale that retains intact features or deposits relating to extraction and reduction of lithic raw material has the potential to yield significant archaeological data. Preference, however, should be given to those sites or locales that have discrete and multiple components that can yield information important in temporal comparisons.

### **Lithic Workshop**

Lithic workshops are special activity sites consisting of areas where prehistoric stone tool production, of varying degrees of intensity, took place (e.g., nodule testing, initial core/blank shaping, secondary reduction, tool shaping and final production). They are commonly adjacent to a quarry or collecting station, though workshops can exist some distance from the source of tool stone if tested nodules and/or blanks were transported elsewhere prior to being intensively reduced. Workshops rarely have features associated with short- or long-term habitation (e.g., house features, stone circles) and related activities. Some lithic raw materials are more predictably reduced after being subjected to heat treatment, thus some workshop locales may have hearths and related features that are a result of heating cores or blanks. While

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workshops may represent a single reduction episode, they more commonly represent multiple episodes of lithic reduction. Multiple use workshops may have such episodes separated spatially, but more typically these episodes are superimposed or overlapping. When palimpsests such as this exist, it is often times difficult, if not impossible, to identify temporally discrete episodes of reduction. This situation is common since workshops usually occur in conjunction with ridge top and slope exposures of tool stone, and these locales are subject to erosion, deflation, or slow deposition which all serve to combine separate use-episodes into a single archaeological deposit. In some uncommon situations, sediment deposition is sufficient to stratigraphically separate discrete reduction episodes or temporally discrete occupations.

Lithic workshops represent areas of stone tool production, which generally is defined as the planned and sequential reduction of the raw material until the desired tool form is achieved. The reduction of quarried or collected stone at a workshop may characterize a complete reduction sequence strategy or portions of a sequence. In addition, these workshop activities may be directly associated with quarry or collecting areas but may also be removed from such locales. The significance of workshops lies in the information they can provide on the strategies of reduction or manufacture. The raw material may be reduced to cores or blanks needed to manufacture finished or formal tools at another location. The workshop also may contain the debris from manufacturing final tool forms. In such situations, exhausted tools may have been discarded when replaced with the newly manufactured tools, and therefore would be present in the site's assemblage. Finally, expedient tools may have been made from the debris associated with the production of other tool forms. These expedient or informal tools may represent the production or maintenance of organic components of a prehistoric group's toolkit(s) (e.g., wood or bone handles in which tools would be hafted, arrow or spear shafts and/or foreshafts). In all of these situations, the workshop's production debris can yield important information relating to the selection, reduction, and use of lithic raw materials. At those sites where multiple time periods are represented and archaeologically recognizable, temporal changes or similarities in stone tool production, material culture, mobility strategies, and trade can be studied.

To be considered eligible for listing on the National Register of Historic Places, a lithic workshop should possess integrity of setting and archaeological content. An argument for eligibility may be strengthened if a workshop can be associated with a quarry or collection station. However, a workshop not directly associated with a source of tool stone would be considered eligible if it yielded, or had the potential to yield, significant information pertaining to prehistoric lithic technology and stone tool production. Such significant information could be present as: 1) discrete activity or production areas that illustrate important aspects of a lithic technological system or a specific reduction sequence as it relates to a specific raw material type; and/or 2) discrete or recognizable components that yield information on synchronic and/or diachronic trends in lithic technology.

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**Geographical Data**

Historic resources associated with Aboriginal Lithic Source Areas occur in all physiographic regions of Kansas. Quarries, collecting stations, and workshops are typically found where bedrock containing knappable stone has been exposed by erosion or is shallowly buried by sediment.



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**Summary of Identification and Evaluation Methods**

The multiple property listing of Aboriginal Lithic Source Areas in Kansas is derived from the archaeological site files maintained by the Kansas State Historical Society, Cultural Resources Division, and the relevant site types (quarries, collecting stations, and lithic workshops) contained in the files. These files represent a compilation of archaeological sites recorded by academic institutions, professional archaeologists, archaeologists from the Kansas State Historical Society, and the general public (avocational archaeologists). The site files represent archaeological work performed within the state of Kansas over the past several decades. Each site is located on the appropriate 7.5' USGS quadrangle topographic map, and has an associated archaeological site form. The site form contains a variety of data, including the topographic setting of the site, site condition, types of artifacts observed or collected, associated prehistoric time period (if known), and inferred or hypothesized site function.

The properties associated with this multiple property nomination fall under three historic contexts that represent the major themes associated with archaeological investigations of these site types: (1) lithic source analysis; (2) lithic technology; and (3) movement, interaction, and exchange. The historic contexts were determined by consulting the *Kansas Prehistoric Archaeological Preservation Plan* (Brown and Simmons 1987), *The Archaeology of Kansas: A Research Guide* (Logan 1996), and numerous professional articles pertaining to prehistoric lithic resource use in Kansas, the surrounding region, and North America in general. These documents collectively describe the importance of lithic resource studies, and many of them relate these issues directly to the archaeological record of Kansas.

The property types are organized by prehistoric site function or site activities (i.e., quarry, collecting station, and workshop). While many of the recorded sites are assigned to specific prehistoric time periods, this information was not used to determine significant property types. Rather, these site types cover a time span that ranges from the Paleoindian period to the Late Prehistoric period.

The requirements for integrity for listing individual archaeological sites that fall under this multiple property listing were derived from the documented condition of similar historic properties. The archaeological literature related to these sites was also reviewed to determine what types of lithic material culture and what conditions of preservation are needed so that those data can significantly contribute to our understanding of prehistoric behavior as it related to lithic source areas.

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